

AD-A196 247

REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION			1b. RESTRICTIVE MARKINGS DTIC FILE COPY		
2a. SECURITY CLASSIFICATION AUTHORITY UNCLASSIFIED			3. DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release, distribution unlimited		
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE					
4. PERFORMING ORGANIZATION REPORT NUMBER(S)			5. MONITORING ORGANIZATION REPORT NUMBER(S) AFOSR-TX- 88-0656		
6a. NAME OF PERFORMING ORGANIZATION Rensselaer Polytechnic Inst		6b. OFFICE SYMBOL (if applicable)	7a. NAME OF MONITORING ORGANIZATION AFOSR		
6c. ADDRESS (City, State and ZIP Code) Troy, NY 12180-3590			7b. ADDRESS (City, State and ZIP Code) BLDG #410 Bolling AFB, DC 20332-6448		
8a. NAME OF FUNDING/SPONSORING ORGANIZATION AFOSR		8b. OFFICE SYMBOL (if applicable) NM	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER AFOSR-82-0155		
8c. ADDRESS (City, State and ZIP Code) BLDG #410 Bolling AFB, DC 20332-6448			10. SOURCE OF FUNDING NOS.		
			PROGRAM ELEMENT NO. 61102F	PROJECT NO. 2304	TASK NO. A4
			WORK NO.		
11. TITLE (Include Security Classification) Theoretical Aerodynamics, Transonic Flow					
12. PERSONAL AUTHOR(S) Julian Cole					
13a. TYPE OF REPORT Final		13b. TIME COVERED FROM 7/1/82 TO 10/31/87		14. DATE OF REPORT (Yr., Mo., Day) 88/02/12	
				15. PAGE COUNT 3	
16. SUPPLEMENTARY NOTATION					
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)		
FIELD	GROUP	SUB. GR.			
19. ABSTRACT (Continue on reverse if necessary and identify by block number) This is the final report for a grant supporting work in applied mathematics related to transonic aerodynamics and problems using related mathematical techniques. The report details students supported and papers published under this grant.					
20. DISTRIBUTION/AVAILABILITY OF ABSTRACT UNCLASSIFIED/UNLIMITED <input checked="" type="checkbox"/> SAME AS RPT			21. ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED		
22a. NAME OF RESPONSIBLE INDIVIDUAL Arje Nachman			22b. TELEPHONE NUMBER (Include Area Code) 202-767-5027		22c. OFFICE SYMBOL UNCLASSIFIED

AFOSR-TR. 88-0656

Final Report

February 1988

U.S. - AFOSR Grant 82-0155

Theoretical Aerodynamics, Transonic Flow

A substantial body of work on transonic aerodynamics and problems using related mathematical techniques has been carried out with the generous support of the Air Force Office of Scientific Research.

A listing of the main publications produced with the support of this grant is given below.

In addition, graduate and research fellows have received partial support while pursuing their degrees. A list of these is also included below together with their present affiliation.


Julian D. Cole

Principal Investigator

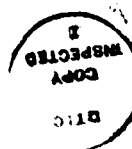
88 0 29 050

Books

J. D. Cole and L. P. Cook. *Transonic Aerodynamics*, North Holland 1986.

Publications and Reports

- V. Villamizar, "Elastic Scattering from a Viscous Incompressible Fluid Sphere at Low Reynolds Number", RPI CAMAC Report 87-8, 1987.
- J. J. Xu, "An Asymptotic Theory of Axisymmetric Dendrite Growth at Small Undercooling", RPI CAMAC Report 87-9, 1987. To appear in Physical Review.
- J. D. Cole and L. P. Cook, "Transonic Choking and Stabilization for Flows about Slender Bodies", RPI CAMAC Report 87-12, 1987. To appear in Z.A.M.P.
- J. D. Cole, "Note on Entropy and Wave Drag", RPI CAMAC Report 87-13, 1987.
- B. Cassis, O. Tikhomirov and B. Wagner, "Asymptotic Solution for the Nonlinear Two Dimensional Chemical Vapor Deposition Problem", RPI CAMAC Report 87-14, 1987. Submitted to SIAM J. Applied Math.
- G. Schleininiger, "Quasi Transonic Flow past Delta Wings", RPI CAMAC Report 85-1, 1985. See also Quarterly of Applied Mathematics.
- S. Rimbey, "Transonic Jets: A Numerical Approach in the Hodograph Plane", RPI Math Report 145, January 1985.
- J. D. Cole and Baoyu Ling, "Airfoil Design at Sonic Velocity", RPI Math Report 146, February 1985.
- J. D. Cole, "Early Transonic Ideas in the Light of Later Developments". To appear in Physics of Fluids.
- J. D. Cole, "Note on the Axisymmetric Sonic Jet", SIAM J. Appl. Math., 43(4), August 1983.



DTIC TAB	
Unannounced	
Justification _____	
By _____	
Distribution/	
Availability Cod	
Dist	Avail and/or Special
A-1	

Students and Postdoctoral Fellows

Present Position

G. Schleiniger	Post-Doctoral Fellow	Professor, University of Delaware
S. Rimbey	Ph.D.	Rocketdyne Division, Rockwell
B. Wagner	Graduate Student	Ph.D. student RPI
V. Villamizar	Ph.D.	Post-doctoral fellow - Northwestern
J. J. Xu	Ph.D.	NASA - Marshall Space Flight Center